IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

1. (currently amended) A multi-wavelength light source, comprising:

an optical pulse light source outputting an optical pulse sequence;

an optical pulse shaping unit making a shape of an optical pulse output from said optical pulse light source into a super Gaussian pulse of a third order or higher;

a spectrum expanding unit expanding a spectrum of an optical pulse sequence composed of shaped optical pulses; and

an optical splitting unit splitting the optical pulse sequence, the spectrum of which is expanded into light beams of respective frequencies by extracting longitudinal mode components of the optical sequence whose spectrum is expanded~~, producing continuous emission light waves~~.

2. (original) The multi-wavelength light source according to claim 1, wherein

said spectrum expanding unit expands the spectrum by using an optical fiber as a nonlinear medium.

3. (original) The multi-wavelength light source according to claim 1, wherein

said spectrum expanding unit expands the spectrum by using a highly nonlinear fiber or a holey fiber as a nonlinear medium.

4. (currently amended) A multi-wavelength light source, comprising:

an optical pulse light source outputting an optical pulse sequence;

an optical pulse shaping unit making a shape of an optical pulse output from said optical pulse light source into a super Gaussian pulse of a third order or higher;

a spectrum expanding unit expanding a spectrum of an optical pulse sequence composed of shaped optical pulses; and

an optical splitting unit splitting the optical pulse sequence, the spectrum of which is expanded into light beams of respective frequencies,

wherein said optical pulse shaping unit comprises

a wavelength splitter performing Fourier transform for the optical pulse sequence,

a spatial modulator controlling an intensity, or an intensity and a phase of a Fourier component, and

a wavelength coupler coupling light beams for which spatial modulation is performed.

5. (original) The multi-wavelength light source according to claim 4, wherein said wavelength splitter and said wavelength coupler are a diffraction grating or an array waveguide grating filter.

6. (currently amended) A multi-wavelength light generating method, comprising:

outputting an optical pulse sequence;

shaping an optical pulse output from an optical pulse light source into a super Gaussian pulse of a third order or higher;

expanding a spectrum of an optical pulse sequence composed of shaped optical pulses; and

splitting the optical pulse sequence, the spectrum of which is expanded into light beams of respective frequencies, by extracting longitudinal mode components of the optical sequence whose spectrum is expanded~~producing continuous emission light waves~~.

7. (previously presented) The multi-wavelength light generating method according to claim 6, wherein the spectrum expanding comprises using an optical fiber as a nonlinear medium to expand the spectrum.

8. (previously presented) The multi-wavelength light generating method according to claim 6, wherein the spectrum expanding comprises using a highly nonlinear fiber or a holey fiber as a nonlinear medium .

9. (currently amended) A multi-wavelength light generating method, comprising:

outputting an optical pulse sequence;

shaping an optical pulse output from an optical pulse light source into a super Gaussian pulse of a third order or higher;

expanding a spectrum of an optical pulse sequence composed of shaped optical pulses; and

splitting the optical pulse sequence, the spectrum of which is expanded into light beams of respective frequencies,

wherein said light pulse shaping comprises

performing Fourier transform for the optical pulse sequence,

controlling an intensity, or an intensity and a phase of a Fourier component, and

coupling light beams for which spatial modulation is performed.

10. (previously presented) The multi-wavelength light generating method according to claim 9, wherein

a diffraction grating or an array waveguide grating filter is used in said Fourier transform performing and said coupling.

11. (currently amended) An apparatus, comprising:

an optical pulse light source to output an optical pulse sequence;

an optical pulse shaper to shape an optical pulse output from said optical pulse light source into a super Gaussian pulse of a third order or higher;

a spectrum expander to expand a spectrum of the optical pulse sequence composed of shaped optical pulses from the optical pulse shaper; and

an optical splitter to split the expanded spectrum of shaped optical pulses into light beams of respective frequencies, by extracting longitudinal mode components of the optical sequence whose spectrum is expanded~~producing continuous emission light waves~~.

12. (currently amended) A method of making multi-wavelength light with almost equal powers for respective frequencies from optical pulse light, comprising:

shaping the optical pulse into a super Gaussian of a third order or higher;

expanding the spectrum of an optical pulse sequence composed of the shaped optical pulses; and

splitting the optical pulse sequence into respective frequencies by extracting longitudinal mode components of the optical sequence whose spectrum is expanded.

13. (previously presented) The method of making multi-wavelength light with almost equal powers for respective frequencies from optical pulse light according to claim 12, wherein the spectrum expanding comprises using an optical fiber as a nonlinear medium to expand the spectrum.

14. (previously presented) The method of making multi-wavelength light with almost equal powers for respective frequencies from optical pulse light according to claim 12, wherein the spectrum expanding comprises using a highly nonlinear fiber or a holey fiber as a nonlinear medium .

15. (currently amended) ~~The method of making multi-wavelength light with almost equal powers for respective frequencies from optical pulse light according to claim 12,~~ A method of making multi-wavelength light with almost equal powers for respective frequencies from optical pulse light, comprising:

shaping the optical pulse into a super Gaussian of a third order or higher;

expanding the spectrum of an optical pulse sequence composed of the shaped optical pulses; and

splitting the optical pulse sequence into respective frequencies,

wherein said light pulse shaping comprises

performing Fourier transform for the optical pulse sequence,

controlling an intensity, or an intensity and a phase of a Fourier component, and

coupling light beams for which spatial modulation is performed.

16. (previously presented) The method of making multi-wavelength light with almost equal powers for respective frequencies from optical pulse light according to claim 15, wherein

a diffraction grating or an array waveguide grating filter is used in said Fourier transform performing and said coupling.